

## ABSTRACT OF DISCLOSURE

An orthogonal frequency division multiplexing (OFDM)-based synchronization detection apparatus includes an input register that stores data, a shifter that shifts the data from the input register based on the exponent of a quantized correlation coefficient, an adder that sums the shifted data, and a peak detector that determines the peak value from among the summed shifted data. The OFDM-based synchronization detection method involves quantizing correlation coefficients for synchronization detection into  $2^n$ -level quantized correlation coefficients ( $n$  is an integer not less than 0), shifting input data using the  $2^n$ -level quantized correlation coefficients, and detecting synchronization using a shifting result.